Daily Diary Report by Bid Item

Contract No.: **04-0120F4**

Diary #: **396** **Const Calendar Day:** 738 **Date:** **16-Sep-2011** **Friday**
Inspector Name: **Bruce, Matt** **Title:** **Transportation Engineer**
Inspection Type: Intermittent
Shift Hours: 07:00 am 05:30 pm **Break:** 00:30 **Over Time:** 02:00
Federal ID:
Location:
Reviewer: **Mathur, Lalit** **Approved Date:** **Status:** Submit

04-0120F4
04-SF-80-13.2/13.9
Self-Anchored
Suspension Bridge

Weather

Temperature **7 AM** 50 - 60 **12 PM** 60 - 70 **4PM** 60 - 70
Precipitation 0.00" **Condition** Overcast in the AM to sunny and windy in the PM

Working Day ☐ If no, explain:

Diary: Dispute ☐

Work description.

- Began to compile all of the surveys done on the tower saddle, grillage and tower shafts before, during and after pullback operations.
- Performed a pre survey walk with Roman Granados on the points to be surveyed Monday September 19th. This survey will be done from the Navy Pier on Treasure Island in the transverse direction of the bridge as yet another check on the deflected shape of the tower after pullback operations. Two points on the north and west shafts of the tower grillage, and at elevations 135, 119, 109, and 77m will be measured.
- Assisted Lalit Mathur with the inspection of Crossbeam 18/Shear Keys 3 and 4 jacking operations. See Lalit's diary for the labor, equipment, safety, conversations and other comments regarding this operation. The following are my comments regarding the jack slip failure that occurred while ABF ironworkers were jacking Crossbeam 18.

1.) ABF was using four jacks located on the support beams to position Crossbeam 18/Shear Keys S3 and S4 to be ready for connecting to OBG lift 13W.
2.) Tai-Lin Liu and Lalit Mathur were on-site when the jacking slip failure incident occurred. See their diaries for details regarding events from 10:00am to 11:00am.
3.) The remainder of the day was spent shoring Crossbeam 18 and relieving the bearing stress on the southern portion of the bottom base plate of Shear Key S4.
4.) Inspection for damage didn't take place until late in the day at 3:00pm. At this time the ABF ironworkers completed the shoring of Crossbeam 18/Shear Keys S3 and S4. Also it was safe to permit access under the crossbeam after shoring was completed.
5.) The ABF engineers responsible for the jacking operations in the field were Zack Lauria and Eric Blue.
6.) Myself, Paul Jefferson, Bob Brignano, and Tai-Lin Liu inspected Crossbeam 18/Shear Keys S3 and S4 after the incident occurred. See the photos below for additional comments and details. The following was observed:

- Turnbuckles used to fasten the upper housing to the lower housing buckled due to the side impact load of the slip movement.
- Timbers used to vertically support the upper housing to the lower housing for Shear Keys S3 and S4 had shifted towards the direction of movement.
- No significant damage was seen on the lower housing base plate of Shear Key S4 where Crossbeam 18/Shear Keys S3 and S4 rested after the jack slip failure on the south end.
- Access platforms sustained bending damage to the handrails.
- There may have been some bending damage to the Crossbeam where the jack slip failure occurred.
- No one was hurt during the jack slip failure incident.

Attachment

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Job Name: 04-0120F4 **Inspector Name** Bruce, Matt **Diary #:** 396 **Date:** 16-Sep-2011 Friday

Bent turnbuckle seen after the jack slip failure on the southeast corner of Shear Key S4.

Crossbeam 18 seen from the middle of Crossbeam 17 looking east.

Additional steel shim plates used to shore the northwest jack under Crossbeam 18 prior to attempting further jacking operations.

Southern end of Crossbeam 18 that bent the working platform railing after the slip, also ABF ironworkers were seen adding additional supports.

Additional shim plates and timbers used to shore the northern end of Crossbeam 18 prior to attempting further jacking operations.

A dramatic shift in the northern support timbers for the S3 Shear Key were observed after the jack slip failure.

A rotation of 1/4" in the upper housing was observed for the S4 Shear Key referencing the support timbers on the northern end of the shear key.

Photo taken by Tai-Lin Liu of the slippage in the two south jacks while ABF ironworkers were adjusting Crossbeam 18.

Tramway support beams placed on top of the tower saddle prior to erecting to the T1 tower erection frame.

Crossbeam 18 bearing on the south portion of Shear Key S4 base plate, due the inadequate horizontal support of 2 jacks on the south support beam.

Additional shim plates and timbers used to shore the northern end of Crossbeam 18 prior to attempting further jacking operations.

ABF ironworkers adding additional supports after the jack slip failure to relieve the bearing pressure on Shear Key S4.